The Journal of Cell Biology

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January 6, 2003

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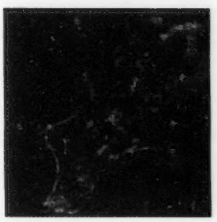

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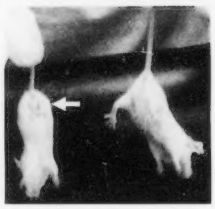
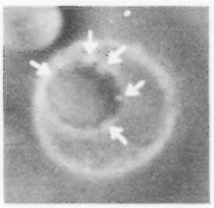


Muscle weakness (left) is evident in a mouse model for spinal muscular atrophy. See page 41.



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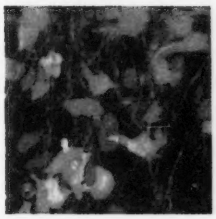

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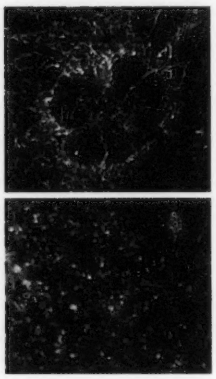

Red and green mitochondria fuse in wild-type cells (top) but not in cells derived from mice deficient for the mitofusins Mfn1 or Mfn2 (bottom). See page 189.

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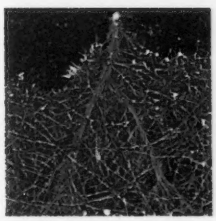

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Filopodia form when actin filaments are gathered together (blue) and protected by a set of molecules (gold) that includes VASP. See page 409.

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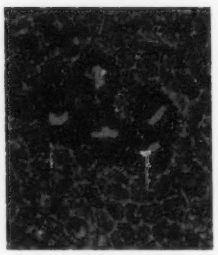

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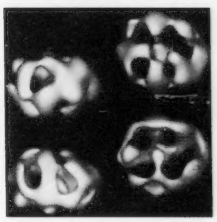

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Proteins enter chloroplasts through a four-channeled translocon. See page 541.

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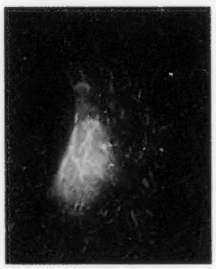
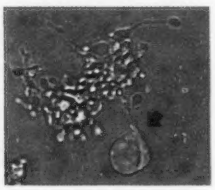


A constitutively activated integrin (green), mutated in a human tumor, can suppress keratinocyte differentiation. See page 589.



Mitochondria with an intact membrane potential (red) are directed into forming platelets (arrow). Exclusion of caspase 9 from these platelets protects them from immediate cell death. See page 577.

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N.L. LeBrasseur

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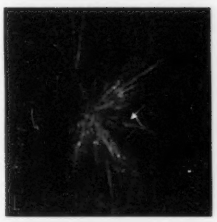

On the Cover

Kinetochores (red) that face away from the centromere can associate with microtubule bundles (green, arrow). The minus ends of these bundles are incorporated into the mitotic spindle as kinetochore fibers by the loop-and-capture method described on page 671.

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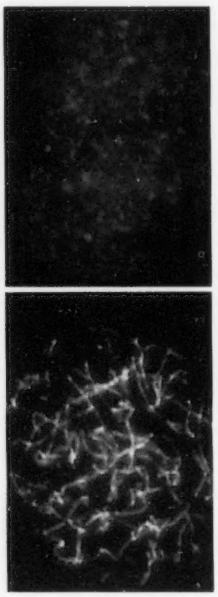

The cohesin Rec8 appears on chromosomes early in meiosis (red, top), before other cohesins (green, bottom), and persists until anaphase I, suggesting that Rec8 establishes axial elements and ensures sister chromatid cohesion throughout meiosis. **See page 657.**

Integrin $\alpha_2\beta_1$ mediates outside-in regulation of platelet spreading on collagen through activation of Src kinases and PLCγ2 769

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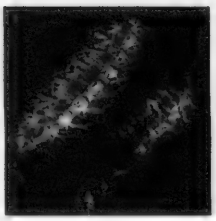

On the Cover

Paramyosin is an essential protein in muscle thick filaments. In flies lacking paramyosin (bottom), myoblast fusion is disrupted, resulting in an abormal muscle pattern. See page 899.

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Further proof of the plasticity of adult stem cells and their role in tissue repair 807

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Skeletal muscle repair by adult human mesenchymal stem cells from synovial membrane 909

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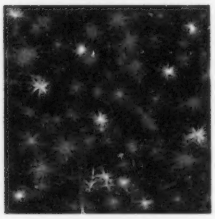

Actin filaments (pseudo-colored) polymerize from WASP-coated beads in an Arp2/3-dependent manner, and reorganize into filopodia-like structures during elongation and fascin-mediated bundling. See page 951.

Association of diacylglycerol kinase ζ with protein kinase C α: spatial regulation of diacylglycerol signaling 929

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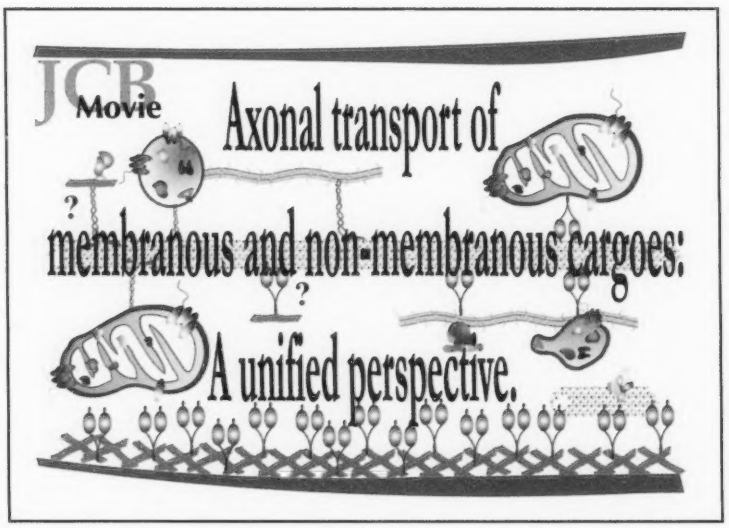

The mini-review on axonal transport by A. Brown (see page 817) is accompanied online by a flash animation created by V. Bourdon. The animation can be viewed at http://www.jcb.org/cgi/content/full/jcb.200212017/DC1

The Journal of Cell Biology

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W.A. Wells

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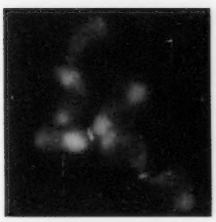
W.A. Wells



On the Cover

Spindle assembly and cytokinesis proceed despite the absence of chromosomes (blue) in fly spermatocytes. See page 993.

– Reviews –

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A perfect funeral with no corpse 989

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To be helped or not helped, that is the question 991

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– Research Articles –

Reports

Spindle assembly and cytokinesis in the absence of chromosomes during *Drosophila* male meiosis 993

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CH-ILKBP regulates cell survival by facilitating the membrane translocation of protein kinase B/Akt 1001

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An essential role for hGle1 nucleocytoplasmic shuttling in mRNA export 1029

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The Ran GTPase cycle is required for yeast nuclear pore complex assembly 1041

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Nuclear envelope breakdown in starfish oocytes proceeds by partial NPC disassembly followed by a rapidly spreading fenestration of nuclear membranes 1055

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The Ulp1 SUMO isopeptidase: distinct domains required for viability, nuclear envelope localization, and substrate specificity 1069

S.-J. Li and M. Hochstrasser

Mid2p stabilizes septin rings during cytokinesis in fission yeast 1083

A. Berlin, A. Paoletti, and F. Chang

An anillin homologue, Mid2p, acts during fission yeast cytokinesis to organize the septin ring and promote cell separation 1093

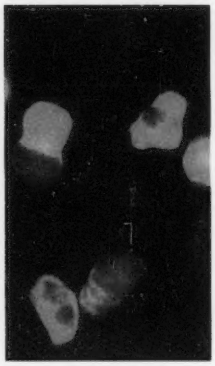
J.J. Tasto, J.L. Morrell, and K.L. Gould

***Dictyostelium* cell death: early emergence and demise of highly polarized paddle cells** 1105

J.-P. Levraud, M. Adam, M.-F. Luciani, C. de Chastellier, R.L. Blanton, and P. Golstein

Caspase cleavage product of BAP31 induces mitochondrial fission through endoplasmic reticulum calcium signals, enhancing cytochrome *c* release to the cytosol 1115

D.G. Breckenridge, M. Stojanovic, R.C. Marcellus, and G.C. Shore



Differentiation into paddle-shaped cells is an early event in *Dictyostelium* cell death. Paddle cells have a polarized distribution of actin (green), which depolymerizes as cells commit to die. See page 1105.

Organization and stability of septin rings (red) at the cleavage furrow depends on Mid2p (green) in yeast. See page 1083.

Determinants of [Cl^-] in recycling and late endosomes and Golgi complex measured using fluorescent ligands 1129

N.D. Sonawane and A.S. Verkman

The cytosolic entry of diphtheria toxin catalytic domain requires a host cell cytosolic translocation factor complex 1139

R. Ratts, H. Zeng, E.A. Berg, C. Blue, M.E. McComb, C.E. Costello, J.C. vanderSpek, and J.R. Murphy

Intercellular calcium communication regulates platelet aggregation and thrombus growth 1151

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